# MOTOROLA Service Manual

AUTO RADIO

MODEL
BKA6A

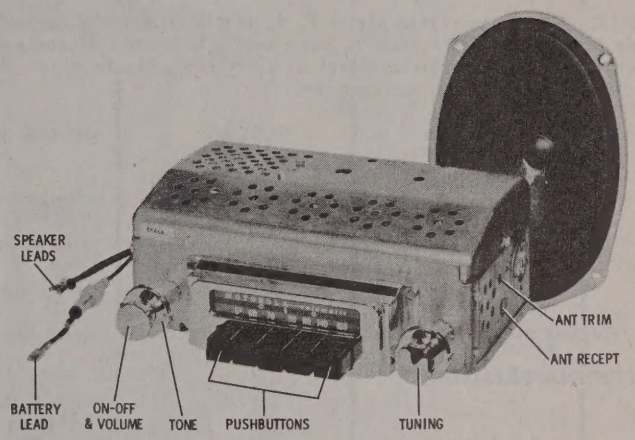
## GENERAL INFORMATION

TYPE - Automotive superheterodyne receiver designed for custom installation in the 1956 Buick.

TUNING RANGE - 540 to 1605 Kc IF - 265 Kc

OPERATES FROM - 12 volt storage battery
Rating 3 amps at 14 volts DC

TUBE COMPLEMENT - 12BD6 RF amp; 12BE6 conv; 12BD6 IF amp; 12CR6 Det-AVC-1st AF amp; 12AQ5 pwr amp; 12X4 rect




## TO SET PUSHBUTTONS

This receiver has an automatic tuner with 5 pushbuttons for automatic station selection.

To set the pushbuttons for automatic tuning, proceed as follows:

1. Tune in the desired station with the manual tuning knob. Tune carefully until you are exactly on the station.

2. Pull out the first pushbutton to be set, to unlock the button for station set-up, and then push button in firmly to set and lock the button.

3. Follow the above procedure for the remaining four buttons.

## MOTOROLA AUTO RADIO WARRANTY SERVICE STATION PROCEDURE FOR BRANDED MODELS

1. The definition of a Motorola Branded Model is one that is branded with the Motorola name, and distributed to dealers through authorized Motorola Distributors.

2. Before performing a warranty repair on a Motorola Branded Auto Radio, you must first receive from the customer the Customer's Warranty Policy. This policy must be filled out by the selling dealer at the time of retail purchase. The Customer's Warranty Policy must show the radio to be within the ninety day warranty period if the repair is to be handled under the Motorola Auto Radio Warranty Plan.

3. The removal or reinstallation of the radio, the elimination of motor noise, tire static, electrical interference, or faulty installation and aerial repairs are not considered as warranty repairs. Consequently, charges for these services are to be borne by the customer.

4. Fill in the Motorola Auto Radio Warranty Labor Claim, Part No. 54P480884, and mail White and Green copies to the Motorola Distributor serving your area. The Yellow copy is to be retained by the Warranty Service Station for his files.

5. Defective parts for warranty repairs made on Motorola Branded Auto Radios are to be sent to your Motorola Distributor for free replacement, supported with the defective parts return form which you are now using.

6. Only those service shops authorized by their Motorola Distributor can perform repairs within the warranty period on a no-charge basis to the customer. If you are not already authorized as a Motorola Auto Radio Warranty Service Station, and you are interested in handling this service, please contact your Motorola Distributor for complete details.

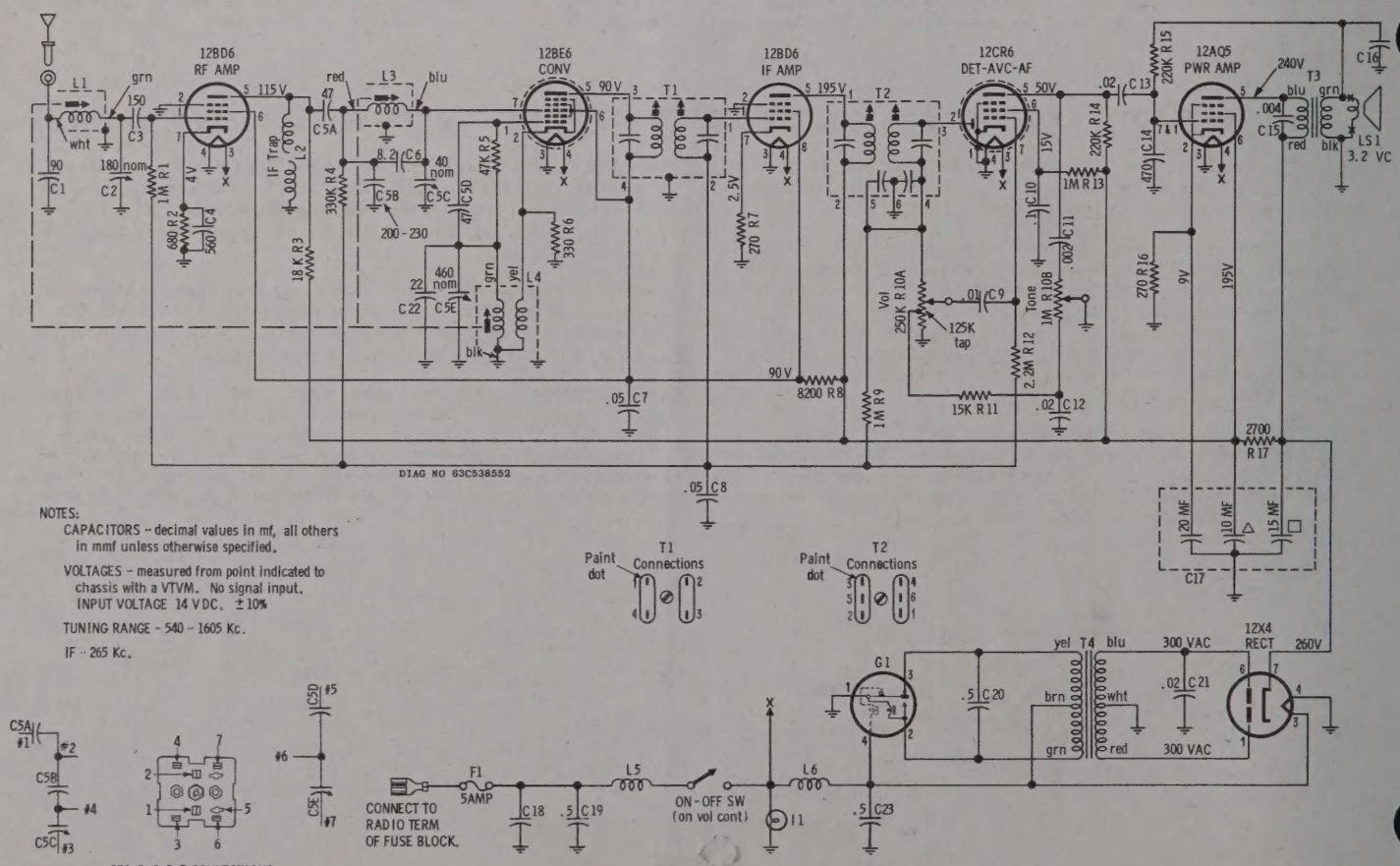
**MOTOROLA INC.** 4545 WEST AUGUSTA BLVD. · CHICAGO 51, ILLINOIS

Part No. 68P538573 Price 5 Cents Printed in U.S.A.

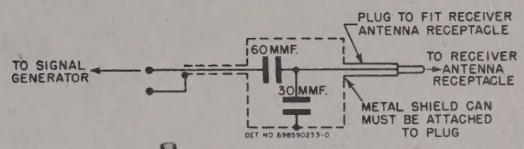
# ALIGNMENT

Connect an output meter across the speaker voice coil. Set tone to high and volume to maximum. Attenuate generator output to maintain 1.79 volts on output meter at all times to prevent overloading the receiver.

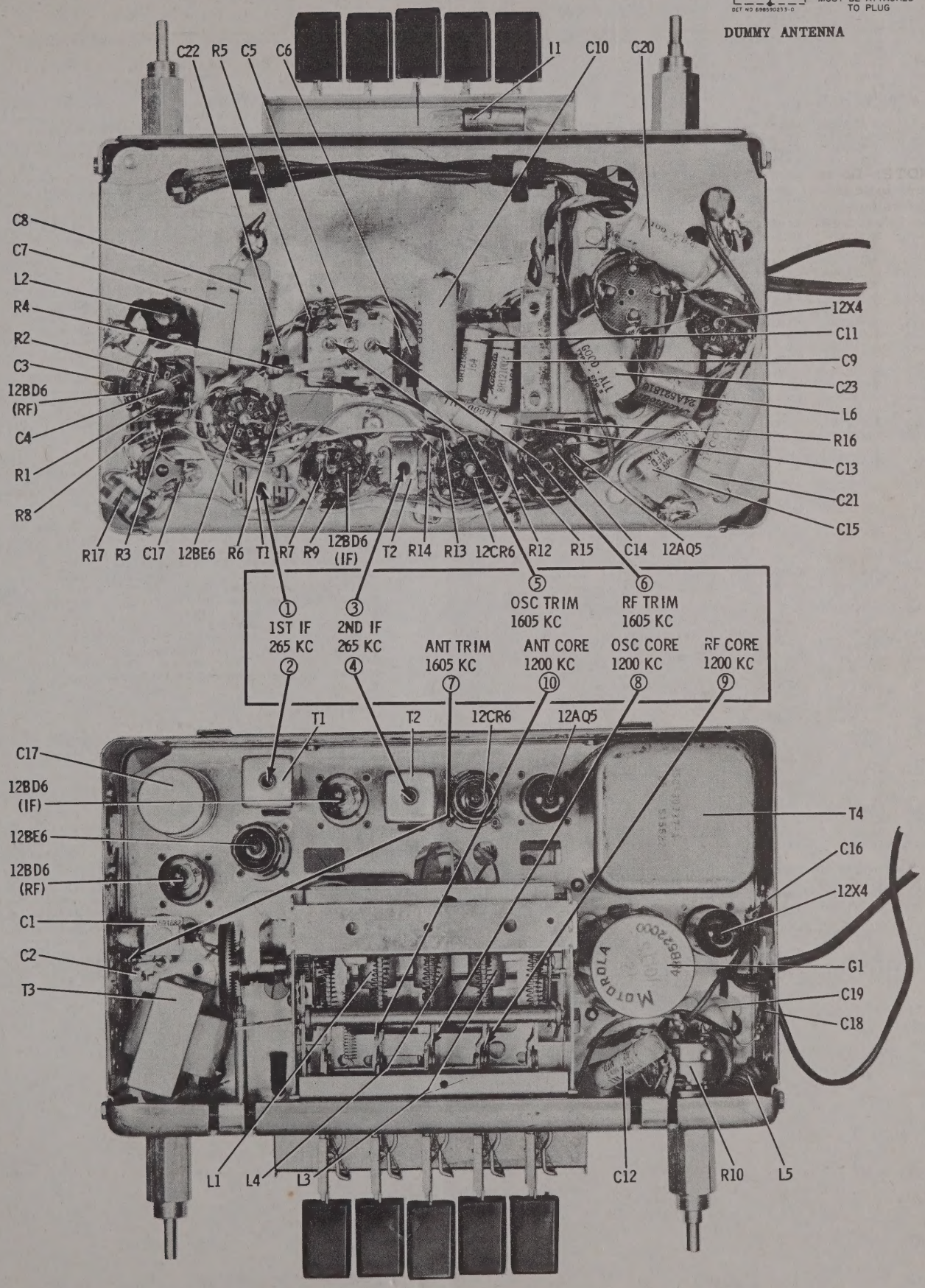
| STEP | GENERATOR CONNECTION | GENERATOR FREQUENCY (400 cycle mod) | TUNER SET TO | ADJUST | REMARKS |
|---|---|---|---|---|---|
| IF ALIGNMENT | | | | | |
| 1. | Conv grid (pin 7) thru .1 mf & chassis | 265 Kc | Hi end stop | 1, 2, 3 & 4 | Adjust for maximum. |
| RF ALIGNMENT | | | | | |
| 2. | Ant recept thru dummy (see Fig.) | 1605 Kc | Hi end stop | 5, 6 & 7 | Adjust for maximum. |
| NOTE: Do not perform steps 3, 4, 5 & 6 unless the tuner has been tampered with or components have been replaced. Before proceeding with step 3, back tuning core out of coils as far as possible without disengaging the cores from the coil forms to eliminate their effect on trimmer adjustments. Remove the escutcheon, dial background plate and the pilot light socket to expose the tuning core. | | | | | |
| 3. | Ant recept thru dummy (see Fig.) | 1605 Kc | Hi end stop | 5, 6 & 7 | Adjust for maximum. |
| 4. | " | 1200 Kc | Tuner carriage 9/32" from hi end stop | 8, 9 & 10 | Adjust for maximum using alignment tool Motorola Part No. 66A76278. |
| 5. | " | 1605 Kc | Hi end stop | 5, 6 & 7 | Adjust for maximum. |
| 6. Repeat steps 4 & 5 until no further increase; then cement tuning cores in place. | | | | | |
| ANTENNA TRIMMER | | | | | |
| 7. | - | - | Weak station around 1400 Kc | 7 | With radio installed in car and antenna fully extended, adjust antenna trimmer for maximum. |




SCHEMATIC DIAGRAM


PLUG TO FIT RECEIVER ANTENNA RECEPTACLE
60 MMF.
TO RECEIVER ANTENNA RECEPTACLE
TO SIGNAL GENERATOR
30 MMF.
METAL SHIELD CAN MUST BE ATTACHED TO PLUG

DUMMY ANTENNA




ALIGNMENT ADJUSTMENTS AND PARTS LOCATION

# REPLACEMENT PARTS LIST

NOTE: When ordering parts, specify model number of set in addition to part number and description of part.

| Ref. No. | Part Number | Description | List Price |
|---|---|---|---|
| **ELECTRICAL PARTS** | | | |
| C-1 | 21A591682 | Capacitor, metal mica: 90 mmf 500V... | .20 |
| C-2 | 20A501419 | Capacitor, mica trim: 50 mmf to 280 mmf | .35 |
| C-3 | 21R410112 | Capacitor, cer disc: 150 mmf 500V.... | .25 |
| C-4 | 21R120936 | Capacitor, cer disc: 560 mmf 500V.... | .25 |
| C-5 | 20B534320 | Capacitor, 5 in 1 mica: C5A 47 mmf; C5B 200-230 mmf; C5C var 7.5 to 90 mmf; C5D 47 mmf; C5E var 420 to 500 mmf.... | 1.30 |
| C-6 | 21R120547 | Capacitor, cer tub: 8.2 mmf 500V..... | .25 |
| C-7 | 8R121567 | Capacitor, paper tub: .05 mf 400V.... | .25 |
| C-8 | 8R121005 | Capacitor, paper tub: .05 mf 200V.... | .25 |
| C-9 | 8R121002 | Capacitor, paper tub: .01 mf 400V.... | .25 |
| C-10 | 8R121006 | Capacitor, paper tub: .1 mf 400V..... | .25 |
| C-11 | 8R121568 | Capacitor, paper tub: .002 mf 600V... | .30 |
| C-12 | 8R121566 | Capacitor, paper tub: .02 mf 400V.... | .25 |
| C-13 | 8R121566 | Capacitor, paper tub: .02 mf 400V.... | .25 |
| C-14 | 21R114554 | Capacitor, cer disc: 470 mmf 500V.... | .25 |
| C-15 | 8R121000 | Capacitor, paper tub: .004 mf 600V... | .35 |
| C-16 | 64K530177 | Spark Plate..... | .05 |
| C-17 | 23A485677 | Capacitor, electrolytic: 10-15mf/350V 20mf/25V..... | 3.05 |
| C-18 | 64K530177 | Spark Plate..... | .05 |
| C-19 | 8K122076 | Capacitor, paper tub: .5 mf 100V..... | .50 |
| C-20 | 8K122076 | Capacitor, paper tub: .5 mf 100V..... | .50 |
| C-21 | 8R121004 | Capacitor, paper tub: .02 mf 1000V... | .35 |
| C-22 | 21R400935 | Capacitor, cer disc: 22 mmf 500V..... | .15 |
| C-23 | 8K122076 | Capacitor, paper tub: .5 mf 100V..... | .50 |
| F-1 | 65R122345 | Fuse, 5 amp..... | .05 |
| G-1 | 48B522000 | Vibrator, 12 volt..... | 4.70 |
| I-1 | 65T533821 | Bulb, pilot light: 12 volt; #1891..... | .25 |
| LS-1 | 50C534819 | Speaker, PM: 6 x 9"; 3.2 ohm VC..... | 7.75** |
| L-2 | 24A532108 | Coil, trap..... | .55 |
| L-5 | 24K534323 | Choke, RF..... | .05 |
| L-6 | 24A521816 | Choke, hash..... | .35 |
| Resistors - Note: | | All resistors are insulated carbon type unless otherwise specified | |
| R-1 | 6R6004 | 1 meg 20% 1/2W..... | .10 |
| R-2 | 6R6040 | 680 10% 1/2W..... | .10 |
| R-3 | 6R5591 | 18,000 10% 1/2W..... | .10 |
| R-4 | 6R6014 | 330,000 20% 1/2W..... | .10 |
| R-5 | 6R6056 | 47,000 20% 1/2W..... | .10 |
| R-6 | 6R6010 | 330 20% 1/2W..... | .10 |
| R-7 | 6R6432 | 270 10% 1/2W..... | .10 |
| R-8 | 6R5725 | 8200 10% 2W..... | .25 |
| R-9 | 6R6004 | 1 meg 20% 1/2W..... | .10 |
| R-10 | 18K534294 | Vol Cont & Switch: vol 250K, tap at 125K; tone 1 meg..... | 2.00 |
| R-11 | 6R2119 | 15,000 20% 1/2W..... | .10 |
| R-12 | 6R3927 | 2.2 meg 20% 1/2W..... | .10 |
| R-13 | 6R6004 | 1 meg 20% 1/2W..... | .10 |
| R-14 | 6R6015 | 220,000 20% 1/2W..... | .10 |
| R-15 | 6R6015 | 220,000 20% 1/2W..... | .10 |
| R-16 | 6R6336 | 270 10% 1W..... | .20 |
| R-17 | 6R5764 | 2700 10% 2W..... | .25 |
| T-1 | 24B532152 | Trans, 1st IF: 265 Kc..... | 1.15 |
| T-2 | 24K532153 | Trans, 2nd IF: 265 Kc..... | 1.40 |
| T-3 | 25B500727 | Trans, output..... | 2.40 |
| T-4 | 25C530737 | Trans, power..... | 5.40 |
| **MECHANICAL PARTS** | | | |
| | 7B534311 | Bracket, dial background..... | .30 |
| | *43K534281 | Bushing, mtg (vol & tuning shafts)..... | .15 |
| | 42B733793 | Clip, IF mtg..... | .02 |
| | 42K731600 | Clip, tube shield..... | .05 |
| | 42A4215 | Clip, vibrator grounding..... | .10 |
| | 29K534326 | Connector, "A" lead..... | .03 |
| | 15C500666 | Cover, bot (tube side)..... | .70 |
| | 15C500663 | Cover, top (wiring side)..... | 1.20 |
| | 13K538718 | Escutcheon..... | 1.75 |
| | 1V513035 | Knob, control; incls spring insert (vol & tuning)..... | .55 |
| | 36K513169 | Knob, disc (dummy)..... | .50 |
| | 36B472865 | Knob, disc (tone)..... | .45 |
| | 2B521332 | Nut, clinch (staked to chassis)..... | .02 |
| | 7B534317 | Plate, dial scale ret..... | .20 |
| | 1V534339 | Pointer..... | .15 |
| | 38B534308 | Pushbutton..... | .10 |
| | 1V539148 | Receptacle, fuse: incls "A" connector. | .70 |
| | *34K538975 | Scale, dial..... | .20 |
| | 26A522403 | Shield, tube..... | .05 |
| | 9A472148 | Socket, ant..... | .25 |
| | 9A70208 | Socket, 4 pin (vib)..... | .20 |
| | 9A500709 | Socket, pilot light..... | .15 |
| | 9C511642 | Socket, tube: 7 pin min..... | .15 |
| | 2S7087 | Speednut: 3/32" rnd (dial scale mtg).. | .01 |
| | 41A485380 | Spring, knob insert..... | .01 |
| | 29A76280 | Terminal, pin: blk (spkr leads)..... | .05 |
| | 29K76282 | Terminal, pin: wht (spkr leads)..... | .03 |
| | 4K512467 | Washer, felt (control knobs)..... | .01 |
| | 39K470032 | Wiper, grounding (bot cover)..... | .05 |
| **MOUNTING PARTS AND ACCESSORIES** | | | |
| | 7B538227 | Bracket, rcvr mtg..... | .15 |
| | 32B538234 | Gasket, spkr..... | .45 |
| | 64C513420 | Plate, spkr mtg..... | 1.65 |
| | 1V538730 | Kit, mtg parts: incls items listed below..... | 1.05 |
| | 7K538241 | Bracket, LH (spkr mtg)..... | .20 |
| | 7B538238 | Bracket, RH (spkr mtg)..... | .20 |
| | 8A4491 | Condenser, noise suppression..... | .85 |
| | 4S7688 | Lockwasher, int-ext: 5/8 x 1/4..... | .01 |
| | 4S114693 | Lockwasher, int-ext: 7/8 x 1/4..... | .02 |
| | 2S7022 | Nut, hex: 1/4-20..... | .02 |
| | 2S2876 | Nut, hex: 1/2-28..... | .04 |
| | 3S8039 | Screw, cap: 1/4-20 x 3/8..... | .05 |
| | 3S7295 | Screw, cap: 1/4-20 x 3/4..... | .04 |
| | 3S7454 | Screw, sheet metal: #8 x 1/4..... | .01 |
| | 6A4141 | Suppressor, distributor..... | .30 |
| **TUNER 77D534325 (AT-155) PARTS** | | | |
| L-1 | 24K533629 | Coil, ant..... | 1.70 |
| L-3 | 24K539494 | Coil, RF..... | 1.70 |
| L-4 | 24K533628 | Coil, osc..... | 1.55 |
| | 77D534325 | Tuner, AT-155: complete..... | 20.20 |
| | | | exch 15.15 |
| | 1K522379 | Arm, pointer..... | .75 |
| | 45B531477 | Arm, pushbutton extension..... | .30 |
| | 51A500995 | Clutch Drive Assem..... | 2.80 |
| | 76K533630 | Core, iron (osc)..... | .30 |
| | 76K533627 | Core, iron (RF & ant)..... | .60 |
| | 5K539016 | Grommet, coil mtg (osc)..... | .01 |
| | 5K536041 | Grommet, coil mtg (RF & ant)..... | .04 |
| | 5A501013 | Grommet, core mtg..... | .05 |
| | 1K534293 | Shaft, manual tuning: incls bushing... | 1.00 |
| | 1K534292 | Shaft, Pinion and Drive Disc Assem.... | .35 |
| | 76K533620 | Sleeve, iron..... | .25 |
| | 41K522368 | Spring, carriage..... | .05 |
| | 41A501047 | Spring, clutch bar return..... | .10 |
| | 41A501096 | Spring, pointer anti-backlash..... | .10 |
| | 4A501039 | Washer, "C" (pointer)..... | .01 |

PRICES SUBJECT TO CHANGE WITHOUT NOTICE
*New Item, Appears in any List for First Time
**Plus Federal Excise Tax at Current Rate